

**Remarks**

The final Office Action dated June 16, 2008 listed the following rejection: claims 4, 7 and 18 stand rejected under 35 U.S.C. § 103(a) over Shiota *et al.* (U.S. Patent No. 5,879,970). The Office Action also indicated that claims 5, 19, 21-22 are allowed. Applicant submits that the Office Action appears to have mistakenly listed claim 7 as being rejected since claim 7 depends from claim 5, which is indicated by the Office Action as being allowed. Thus, Applicant requests that claim 7 be identified as allowed. In the discussion set forth below, Applicant does not acquiesce to any rejection or averment in this Office Action unless Applicant expressly indicates otherwise.

Applicant respectfully traverses the § 103(a) rejection of claims 4 and 18 because the modification of the Shiota reference proposed by the Examiner renders Shiota unsatisfactory for its intended purpose. According to M.P.E.P. § 2143.01, “If (a) proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.”). *See, also, In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984). In this instance the Examiner proposes to modify Shiota to use a temperature between 500°C and 600°C. The cited portions of Shiota, however, teach that the use of a temperature between 350°C and 450°C is critical to the formation of the desired polycrystalline silicon-germanium alloy. *See, e.g.*, Col. 2:33-36, Col. 4:35-43, Col. 5:25-29, and Col. 7:35-44. As a first example, Shiota teaches increasing the silicon content of the polycrystalline silicon-germanium alloy by using a temperature between 350°C and 450°C in order to increase the breakdown voltage. *See, e.g.*, Col. 2:14-36. As a second example, Shiota teaches that “the polycrystalline silicon-germanium alloy is deposited on the substrate of glass, which hardly withstands high temperature over 450 degrees in centigrade.” *See* Col. 7:42-44. Therefore, Applicant submits that modifying Shiota to use a temperature between 500°C and 600°C would frustrate Shiota’s stated purpose of forming the desired polycrystalline silicon-germanium alloy thus rendering Shiota unsatisfactory for its intended purpose. Thus, there is no motivation for the skilled artisan to modify Shiota in the manner proposed by the Examiner. Accordingly, the § 103(a) rejection of claims 4 and 18 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claims 4 and 18 because the Examiner fails to establish a *prima facie* case of obviousness. The Examiner appears to be taking Official Notice that aspects of the claimed invention directed to the use of a temperature between 500°C and 600°C are well known; however, the Examiner has not cited to any prior art reference to support this assertion. *See, e.g.*, M.P.E.P. § 2144.03. As such, Applicant requests that the Examiner provide documentary support for the assertion that use of the claimed temperature range is well known. Applicant also requests that the Examiner provide motivation for why the skilled artisan would modify the Shiota reference to use a temperature between 500°C and 600°C. In response to the Examiner's assertions regarding routine experimentation and optimization of ranges, Applicant submits that the Examiner must first establish a *prima facie* case of obviousness by citing to a prior art reference that discloses an overlapping range (*see, e.g.*, M.P.E.P. § 2144.05(I)) before Applicant needs to present evidence of the criticality of the claimed range (*see, e.g.*, M.P.E.P. § 2144.05(III)). In this instance the Examiner has not cited to any prior art reference that teaches use of a temperature between 500°C and 600°C, thus, the Examiner has not established a *prima facie* case of obviousness. Accordingly, the § 103(a) rejection of claims 4 and 18 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claim 18 because the Examiner improperly relies upon Official Notice without documentary evidence and because the Examiner fails to provided any reason why the skilled artisan would modify the Shiota reference. Specifically, the Examiner simply asserts that use of SiH<sub>4</sub> and GeH<sub>4</sub> source gases is known, and thus it would have been obvious to modify Shiota to use these source gases. According to M.P.E.P. § 214403, however, "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known" and "While 'official notice' may be relied on, these circumstances should be rare when an application is under final rejection". In this instance Applicant submits that the use of SiH<sub>4</sub> and GeH<sub>4</sub> source gases is not capable of instant and unquestionable demonstration as being well-known, thus, the Examiner is required to provide documentary evidence to support the use of Official Notice.

Moreover, the Examiner fails to provide any reason why the skilled artisan would modify Shiota to use SiH<sub>4</sub> and GeH<sub>4</sub> source gases. The recent Supreme Court decision supports the long-standing law that the mere existence of elements in the prior art is not sufficient for a § 103(a) rejection:

“Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007).

Accordingly, the § 103(a) rejection of claim 18 is improper and Applicant requests that it be withdrawn. Should any rejection based upon Shiota be maintained, Applicant requests that the Examiner provide documentary support for the assertion that use of SiH<sub>4</sub> and GeH<sub>4</sub> source gases is well known and that the Examiner provide a reason why the skilled artisan would modify Shiota to use these source gases.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063.

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